

WHAT IS CLAIMED IS:

1. An image reading apparatus for optically reading an image, comprising:

lighting means for lighting a predetermined region including an object to be read;

image pickup means for receiving reflected light from the predetermined region lit by said lighting means and outputting a corresponding image pickup signal;

lighting control means for controlling an amount of light emitted by said lighting means in a predetermined range so as to arrange the image pickup signal output from said image pickup means at a proper level; and

determining means for determining a dark image pickup state on the basis of the image pickup signal output from said image pickup means, wherein

said lighting control means controls the amount of light emitted by said lighting means to be low when said determining means determines the dark image pickup state.

2. The apparatus according to claim 1, wherein said lighting control means controls an amount of light emitted by said lighting means to be the lowest, within the predetermined range, when said determining means determines the dark image pickup state.

3. The apparatus according to claim 1, wherein,

when said lighting control means controls, upon
said determining means determining a dark image pickup
state, an amount of light emitted by said lighting
means to be low, said lighting control means controls
5 an amount of light emitted by said lighting means so as
to set the image pickup signal output from said image
pickup means at a predetermined level.

4. The apparatus according to claim 1, wherein
when said lighting means is configured to
10 repeatedly generate pulsed light in units of image
pickup frames,

said determining means determines a dark image
pickup state in units of the image pickup frames,
said lighting control means controls an amount of
15 light emitted by said lighting means in units of the
image pickup frames.

5. The apparatus according to claim 1, wherein
said determining means determines a dark image
pickup state using an image pickup signal corresponding
20 to a substantial center area in an image pickup display
among image pickup signals output from said image
pickup means.

6. The apparatus according to claim 1, wherein
said lighting control means controls an amount
25 of light emitted by said lighting means within
a predetermined range so as to set the maximum value of
an image pickup signal output from said image pickup

means at a proper level.

7. The apparatus according to claim 1, wherein
said determining means compares the maximum value
of an image pickup signal output from said image pickup
5 means to a predetermined threshold, and determines a
dark image pickup state in a case where the maximum
value falls below the predetermined threshold.

8. The apparatus according to claim 7, wherein,
when the maximum value is determined, by said
10 determining means, to be equal to or above the
predetermined threshold,

said lighting control means controls an amount of
light emitted by said lighting means within a
predetermined range to set an image pickup signal
15 output from said image pickup means at proper level.

9. An image reading apparatus for optically
reading an image, comprising:

a LED for lighting a predetermined region
including an object to be read;

20 an image pickup element for receiving reflected
light from the predetermined region lit by said LED and
outputting a corresponding image pickup signal;

a dark image pickup detecting circuit for
determining a dark image pickup state on the basis of
25 the image pickup signal output from said image pickup
element; and

a control section for controlling an amount of

light supplied by said LED within a predetermined range to set the image pickup signal output from said image pickup element at a proper level, and controlling an amount of light supplied from said LED to be low,
5 when said dark image pickup detecting circuit determines a dark image pickup state.

10 10. The apparatus according to claim 9, wherein said control section, when said dark image pickup detecting circuit determines the dark image pickup state, controls an amount of light of said LED to become the lowest in the predetermined range.

15 11. The apparatus according to claim 9, wherein, when said control section controls, upon said dark image pickup detecting circuit determining a dark image pickup state, an amount of light emitted by the LED to be low, said control section controls an amount of light of said LED so as to set the image pickup signal output from said image pickup element at a predetermined level.

20 12. The apparatus according to claim 9, wherein, when said LED is driven to repeatedly generate light pulses in units of image pickup frames, said dark image pickup detecting circuit determines a dark image pickup state in units of the
25 image pickup frames,

said control section controls an amount of light of said LED in units of the image pickup frames.

13. The apparatus according to claim 9, wherein
said dark image pickup detecting circuit
determines a dark image pickup state using an image
pickup signal corresponding to a substantial center
5 area in an image pickup display among image pickup
signals output from said image pickup element.

14. The apparatus according to claim 9, wherein
said control section controls an amount of light
of said LED within a predetermined range so as to set
10 the maximum value of an image pickup signal output from
said image pickup element at a proper level.

15. The apparatus according to claim 9, wherein
said dark image pickup detecting circuit compares
the maximum value an of image pickup signal output from
15 said image pickup element to a predetermined threshold,
and determines a dark image pickup state in a case
where the maximum value falls below the predetermined
threshold.

16. The apparatus according to claim 15, wherein
20 when the maximum value is determined to be equal
to or above the predetermined threshold by said dark
image pickup detecting circuit,

said control section controls an amount of light
of said LED within a predetermined range so as to set
25 an image pickup signal output from said image pickup
element at a proper level.